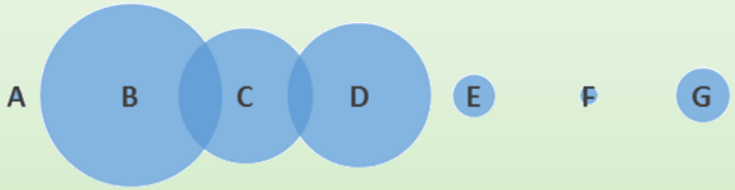
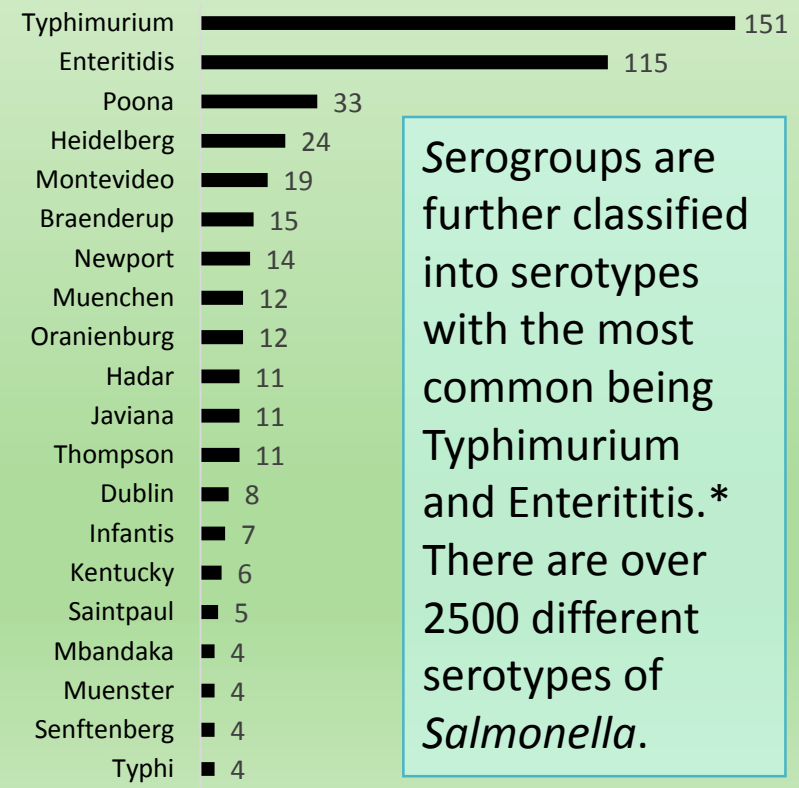
Salmonella in Montana: The Importance of Laboratory Analysis in Outbreak Detection and Investigation

On average, 110 cases of *Salmonella* are reported in Montana each year.



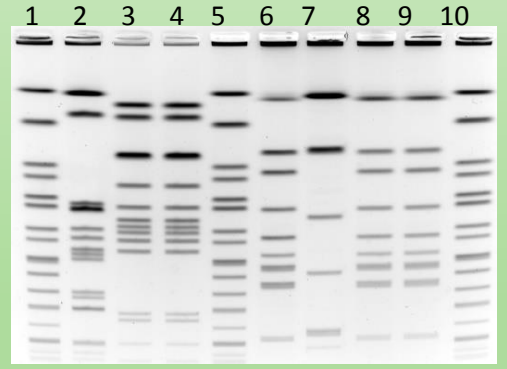
Salmonella species are divided into serogroups and B, C and D are most common in Montana.*



Serogroups are further classified into serotypes with the most common being Typhimurium and Enterititis.* There are over 2500 different serotypes of *Salmonella*.

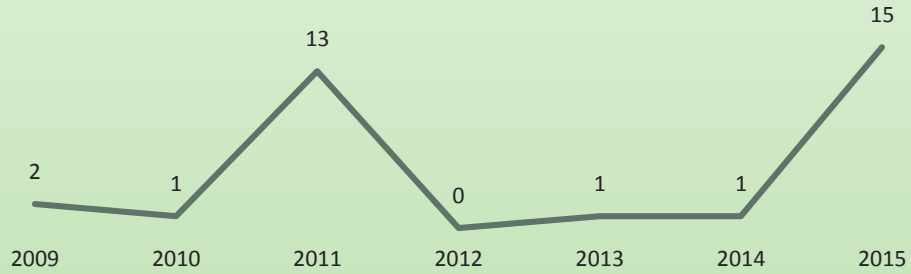
*Data derived from Montana Public Health Laboratory (MT PHL) 2009-2015

Pulsed-field gel electrophoresis (PFGE) provides a unique fingerprint for each organism. In Montana, there are more than 700 unique patterns for *Salmonella* since MT PHL started PFGE in 2001.



Each sample is treated in two different ways resulting in two distinct patterns. Identical matches to both patterns indicate infection likely came from the same organism (Sample A in lanes 3&8 matches sample B in lanes 4&9).

The 2015 cucumber outbreak is caused by *Salmonella* Poona, which belongs to serogroup G and makes up only 6% of all serotypes reported in Montana. All cases had identical PFGE patterns, which linked them to the outbreak.



Salmonella Poona is rarely reported in Montana. Increases in 2011 and 2015 were due to outbreaks.

Salmonella is a common cause of foodborne illness in the United States. To learn more about the complex biology and classification of *Salmonella*, visit cdc.gov/salmonella. To learn more about the current outbreak and how it affects Montana, visit dphhs.mt.gov.

MONTANA DPHHS
Healthy People. Healthy Communities.
Department of Public Health & Human Services